

EXHIBIT 4

FINAL EXPLANATION OF SIGNIFICANT DIFFERENCES**Parcel B, Hunters Point Shipyard Site
San Francisco, California****May 4, 2000****I. Introduction**

This Explanation of Significant Differences (ESD) updates the soil cleanup values presented in Table 8 of the Record of Decision for Parcel B, Hunters Point Shipyard (the Site) dated October 7, 1997 (Parcel B ROD). In the Parcel B ROD, the soil cleanup values presented in Table 8 were calculated to correspond to:

- A human health risk level of 10^{-6} (one in one million) or less for carcinogens except where ambient levels exceed 10^{-6} .
- A hazard index (HI) of 1 or less for noncarcinogens, except where ambient levels exceed an HI of 1 because of the fill material.
- Lead levels of less than 221 milligrams per kilogram (mg/kg).

The soil cleanup values were based on the U.S. Environmental Protection Agency, Region IX (EPA) 1995 preliminary remediation goals (PRG) with Navy adjustments to incorporate the produce uptake pathway and Hunters Point Shipyard ambient levels (HPAL) for metals (only). This ESD revises the soil cleanup values presented in Table 8 to incorporate EPA's 1999 PRGs and the revised nickel ambient levels. Attachment A to this ESD presents the original and revised Table 8 values.

The selected remedy in the Parcel B ROD includes the excavation of contaminated soils to the groundwater table, offsite disposal of the excavated soils, groundwater monitoring to ensure protection of San Francisco Bay from contaminated groundwater and institutional controls prohibiting all uses of groundwater and governing handling of any residual contaminated soils.

In August 1998, the Base Realignment and Closure (BRAC) Cleanup Team (BCT) approved an ESD to revise the selected remedy of the Parcel B ROD to require cleanup of contaminated soils to a maximum depth of 10 feet versus the groundwater table.

The preparation and public notice of this ESD is pursuant to Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund), 42 U.S.C. Section 9617(c). This ESD is available for review at two information repositories: the Anna E. Waden Branch Library located at 5075 Third Street in San Francisco and the City of San Francisco's Main Library located at 100 Larkin Street. The information repositories are available during normal library hours. This ESD will become part of the Administrative Record for the Site, which can be accessed by contacting Ms. Diane Silva, Naval Facilities Engineering Command, Engineering Field Division, Southwest (SWDIV), at (619) 532-3676.

II. Summary of Site History and Selected Remedy

The Site is a deactivated shipyard located in southeastern portion of San Francisco, California, adjacent to San Francisco Bay. The Site consists of 936 acres, 493 on land and 443 under water in San Francisco Bay. In 1940, the Navy obtained ownership of the shipyard for ship building, repair and maintenance activities. After World War II, activities shifted from ship repair to submarine servicing and testing. Between 1976

and 1986, the Navy leased most of the Site to Triple A Machine Shop, a private ship-repair company. The Site was an annex of Naval Station Treasure Island until March 1994 when the Navy's Engineering Field Activity, West (EFA West) assumed management of the property. In October 1999, SWDIV assumed management of the Site.

In 1987, the Navy initiated studies confirming contamination was present at a number of Site locations. These findings, combined with the proximity to an off-site drinking water source (the aquifer used by the Albion Springs water bottling company), resulted in the EPA placing the Site on the National Priorities List (NPL), in 1989. In 1991, the Department of Defense listed the Site for closure.

In January 1992, the Navy, the EPA, California Department of Toxic Substances Control (DTSC), and the California Regional Water Quality Control Board (RWQCB) entered into a Federal Facility Agreement to coordinate the environmental investigation and cleanup of the Site. To expedite the investigation and cleanup, the Site was divided into six parcels: Parcels A through F.

This ESD pertains solely to remedial efforts at Parcel B. Investigation results at Parcel B showed that soils and groundwater have been impacted with a variety of hazardous substances including metals, polychlorinated biphenyls (PCB), volatile organic compounds (VOC), semivolatile organic compounds (SVOC), polynuclear aromatic hydrocarbons (PAH), and pesticides.

In the Parcel B ROD, the Navy selected excavation and offsite disposal as the final remedy for contaminated soils. The ROD also requires groundwater monitoring for up to 30 years to prevent any potential migration of contaminated groundwater into San Francisco Bay. In addition, steam and fuel lines are to be removed, storm drains are to be lined and pressure grouted as appropriate, and all future uses of groundwater will be prohibited by a deed restriction.

III. Description of Significant Differences and the Basis for those Differences

This ESD updates the soil cleanup levels presented in Table 8 of the Parcel B ROD to incorporate the EPA's current 1999 PRGs, including adjustments by the Navy to incorporate the produce uptake pathway, and the revised nickel ambient levels. The basis for these changes is presented below.

Change in EPA PRGs

When cleanup goals presented in Table 8 of the ROD were developed in 1995, they were consistent with EPA and state human health risk assessment guidance. Specifically, the cleanup levels correspond to an excess lifetime cancer risk (ELCR) of 1×10^{-6} assuming residential contact with soils, including the consumption of homegrown produce. Since 1995, EPA has updated the guidance for risk assessment input parameters for several classes of chemicals. Applying the revised guidance (1999 PRGs with adjustments to incorporate the produce uptake pathway as appropriate) results in revised chemical-specific cleanup levels in Table 8. Attachment A to this ESD presents the original and revised Table 8 values. Attachment B to this ESD includes calculations and technical information supporting the revised Table 8 values.

Change in Nickel Ambient Values

In July 1998, remedial action (RA) activities began at Parcel B. Nickel concentrations in soil samples collected from remediation areas excavated during the RA commonly exceeded the calculated HPAL. As a

result, the Navy reviewed the approach used to calculate the HPAL for nickel and found that, while the nickel ambient concentrations were calculated based on a nickel-magnesium regression, chemical analysis of serpentinite samples at the site shows a consistently higher nickel to magnesium ratio. The Navy first hypothesized that the higher nickel to magnesium ratio was probably a consequence of weathering of serpentinite bedrock. DTSC, based on its independent research and field observations, agreed that preferential leaching of magnesium from serpentinite soil would occur as part of the soil weathering process. DTSC further pointed out that cobalt is not preferentially leached from weathered serpentine soils and a nickel-cobalt regression could be used. The resulting nickel-cobalt ratio should remain relatively the same as soils weather. Using this information, a new nickel-cobalt regression was formulated to calculate nickel ambient levels and was presented in the Nickel Screening and Implementation Plan Technical Memorandum dated August 4, 1999. Nickel ambient concentrations are not listed in Attachment A because they are sample-specific. However, they can be calculated from the specific cobalt concentrations using the following formula:

$$HPAL_{Ni-Co} = \exp[1.748 + 1.433(\ln Co)]$$

IV. Support Agency Comments

The EPA, DTSC and the RWQCB respectively concurred with updating the soil cleanup values addressed in this ESD for Parcel B in letters dated March 28, March 30, and March 23, 2000. This concurrence was provided because the soil cleanup goals in Table 8 were adjusted using the most recent PRG values which EPA Region 9 has developed. Further, the overall goals of the Parcel B ROD are not changed by this ESD. The selected remedy for Parcel B continues to be excavation of soils to a maximum depth of 10 feet to meet a human health risk level of 10^{-6} or less for carcinogens (except where ambient levels exceed this goal), an HI of 1 or less (except where ambient levels exceed this goal), and a lead level of 221 mg/kg.

V. Affirmation of the Statutory Determinations

The selected remedy for Parcel B as modified by this ESD continues to satisfy the requirements set forth in Section 121 of CERCLA. The Navy has determined that the revised soil cleanup levels continue to satisfy the statutory requirements of cleanup under the Superfund process. Considering the information that has been developed during implementation of the remedy and the proposed changes to the selected remedial soil cleanup goals, the Navy affirms that the updated soil cleanup goals remain protective of human health and the environment, and continue to comply with Federal and state requirements.

VI. Public Participation Activities

This ESD is available for review and comment by any member of the public at the two information repositories mentioned in Section I of this ESD. No public meetings are proposed for this ESD; however, a public comment period was conducted on the draft ESD from April 10 through April 24, 2000. This Final ESD will be advertised for a 30-day public notice from May 8, 2000 through June 7, 2000.



Richard G. Mach Jr., P.E.
BRAC Environmental Coordinator
Hunters Point Shipyard

4 May 00

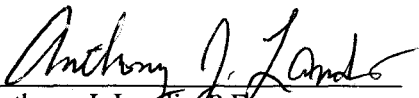
Date



Daniel A. Meer
Chief
Federal Facilities Cleanup Branch
U.S. Environmental Protection Agency Region IX

5 May 00

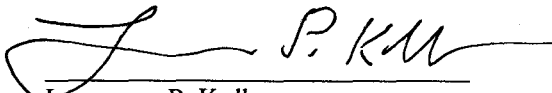
Date



Anthony J. Landis, P.E.
Chief, Northern California Operations
Office of Military Facilities
Department of Toxic Substances Control
California Environmental Protection Agency

9 May 00

Date



Lawrence P. Kolb
Acting Executive Director
California Regional Water Quality Control Board
San Francisco Bay Region

8 May 00

Date